5/91
Dolly Varden/Bull Trout
Salvelinus malma
Dolly Varden
Salvelinus confluentus
Bull Trout

Range:
The historical distribution of the bull trout and Dolly Varden extended from 41 to 60 degrees north latitude. North of the 49th parallel, the bull trout is found in most drainages on both sides of the continental divide (Cavender 1978).

Washington Distribution:
Bull trout and Dolly Varden are found throughout the coastal and inland streams and lakes of Washington.

Habitat Requirements:
Dolly Varden/bull trout share similar life histories, which include residents to headwater streams, fluvial, adfluvial, and/or anadromous. They have been categorized as opportunistic feeders, feeding on a variety of water column organisms (fish) and bottom dwellers (insects) (Thompson and Tufts 1967, Shepard et al. 1984, Pratt 1984). Spawning occurs in the upper reaches of clear streams in areas of flat gradient, uniform flow and uniform gravel or small cobble. Juveniles (less than 100 mm) are primarily bottom- dwellers, occupying positions above, on, or below the bottom. Fry are found in shallow, slow backwater side channels and eddies (Shepard et al. 1984, Elliott 1986). Older individuals are found in deeper and faster water compared to juveniles. Adults are often found in pools sheltered by large, organic debris or "clean" cobble substrate (McPhail and Murray 1979).

Limiting Factors:
Stream temperatures which exceed the normal spawning and egg incubation range, 2-4 degrees C (35-39☼F), a lack of spawning and rearing habitat, high sedimentation on spawning grounds, and/or a lack of preferred food items will also limit the population and range of bull trout and Dolly Varden.

Management Recommendations:
The maintenance of riparian vegetation is essential for controlling stream temperature, providing cover, and protecting against lateral erosion. Removal of streamside vegetation lowers canopy density (shading) and increases sedimentation. Increases in solar radiation raises stream temperatures thereby negatively impacting spawning, hatching, and rearing survival. Increased sedimentation contributes to the loss of spawning habitat and decreases the diversity of aquatic invertebrates and other food items (Newbold et al. 1980, Noss 1983, Heede 1985). Buffer zones along stream banks should be at least the width of the height of the tallest tree or 15.2 m (50 ft), whichever is wider. The vegetative

buffer will provide erosion control, and maintain natural stream temperatures and diversities of aquatic invertebrates (Meehan et al. 1977, Newbold et al. 1980). In Washington, this can range up to 60 m (200 ft.). This "zone of influence" (Meehan et al. 1977) should be maintained along stream banks which provide bull trout and Dolly Varden habitat, and any other stream which directly or indirectly influences bull trout. Road construction and maintenance activities should be avoided adjacent to streams with bull trout and Dolly Varden. In-stream structures such as bridges, piers, boat ramps, or culverts must not impede the natural movements of bull trout and Dolly Varden.

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Key Points:

Habitat Requirements:

· Cool waters of lakes or pools in streams sheltered by large organic debris and clean cobble substrate.

· Spawning habitat consists of gravel or small cobble in upper reaches of clear streams in areas of flat gradient.

· Fry inhabit shallow, slow backwater and side channels.

Management Recommendations:

· Buffer zones of at least the width of the height of the tallest tree (or 15.2 m (50 ft), whichever is wider) should be maintained along stream banks which provide bull trout and Dolly Varden habitat, and any other stream which directly or indirectly influences bull trout and Dolly Varden habitat.

· Road construction and maintenance activities should be avoided adjacent to streams which provide bull trout and Dolly Varden habitat.

· In-stream structures such as bridges, piers, boat ramps, or culverts must not impede the natural movements of bull trout and Dolly Varden.